



EFFECTIVENESS IN SERVICE DELIVERY OF KERALA SUSTAINABLE URBAN DEVELOPMENT PROJECTS-A STUDY WITH REFERENCE TO WATER SUPPLY SERVICES

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ABSTRACT

Background: Our cities are true representatives of various economic, social, cultural and environmental changes that have taken place over the years. They represent the pulse of development. Urbanization has truly contributed to increase the number of million plus cities in India. The increase in population adds to the productivity of these cities. They make more contribution to the Gross Domestic Product. Thus cities and towns are centers of development. Since these urban areas play an important role in sustaining economic prosperity of the nation, sufficient care is taken to provide these areas with quality services. The Report on Indian Urban Infrastructure and Services (2011) had pointed out the need for planned urban development that would add to economic prosperity. Building new cities or upgrading existing ones will not improve the situation. Increased population demand more housing, transportation, education, hospitals, clean drinking water and sanitation facilities. They also create more congestion and pollution. In the report suggestions given for managing these challenges, are planning by integrating investment in infrastructure with strengthened urban governance and urban financing leading to enhanced quality of service delivery systems through capacity building.

KEYWORDS: Urbanisation, Service, Service Delivery, Service Delivery Systems, GDP, Sustainability.

1. INTRODUCTION

The 73rd and 74th Constitutional Amendment Act (CAA), 1992 demanded empowerment of Urban Local Bodies (ULBs) by giving them power, rights and making them accountable for their activities. The Central Government often introduces many new schemes for the development of various regions, which can be fruitful only if it reaches the correct place and meets the requirements of the citizens for whom these are meant. This is possible only if the administration at the lowest level is empowered through sharing of responsibilities and powers. Here comes the importance of decentralization. Gujarat was the first state in implementing decentralized planning. In 1973 a three tier Panchayati Raj system was introduced in the state. Other states that introduced decentralized planning were Rajasthan, Maharashtra, and Karnataka. None of these states could implement a fully democratic form of decentralized planning by empowering people at the grass root level to formulate and implement their own development plans. The State Government remained the custodian of funds and financial support for the local level agencies.

Kerala, Karnataka, Bengal, Sikkim, Madhya Pradesh, Rajasthan and Tamilnadu state governments were among the first in implementing the changes. The Panchayati Raj ministry aimed at setting up district Planning Committees (PCs) to oversee matters of common interest between Panchayats and municipalities. It included spatial planning, sharing of physical and natural resources, integrated development of infrastructure, environmental conservation and assessment of the extent and type of available resources.

The Kerala Municipal Act, 1994 entrusted the ULBs/LSGDs/MCs, responsibility to render *civic services* consisting of basic urban services of water supply, sewerage disposal, waste management, drainage, and roads and transportation and all services increasing public convenience. These institutions render *administrative services* like issuing of various certificates, maintaining public utility services, ambulance services: *regulatory services* like birth, death marriage registration, issuing license and permits, issuing notices, maintaining records and registers of municipal transactions. They are also responsible for the *transferred services* like medical and health education, social welfare programs and social security schemes.

Services can be useful only if they are delivered effectively. The service provider shall form a proper channel for delivering the services through well-organized systems. Only when they reach the targeted beneficiaries at the appropriate time do they become fruitful. Hence not only services but their delivery too is also equally important both in case of private goods and in case of public goods.

2. SERVICES AND SERVICE DELIVERY

Sasser et al. (1978) were of the opinion that services differentiate themselves from 'goods' through their characteristics of 'intangibility, inseparability, heterogeneity and perishability'. Shostack (1982) says that service is a process, where there is interaction between people involved and physical components. Services can be business services, social services and personal services. Social services are provided to people with an aim of increasing the standard of living and quality of life. They can be Private or Public. Lovelock (1993) was of the opinion that service sector is a whole industry with components of economic

sectors and infrastructure such as telecommunication, which are different from one another. The Oxford dictionary defines services as action done for the benefit of others. Johnson (1994) view that services can be defined through various perspectives i.e. Marketing, Consumer Behavior, Economics, and Human Resource Management. Kellogg and Nie (1995) clarify the importance of 'customer' in the process of conduct and service delivery. Services provide value and satisfaction Mohr & Bithner (1995) called service as an end result which pays back the customer for the price he pays.

Public services specified in schedule twelve of the Municipal Law enhances the quality of life of citizens, their social and economic opportunities through better standard of living, better accessibility to work etc. Any services incorporated in the constitution as well as other services provided by Municipal Law can be called services provided by Municipal Corporation. It includes water supply, sewerage, solid waste management, Roads and Transportation, community upgrading and as such specified in consultation.

Service Delivery of municipal services in urban areas is the responsibility of the municipal authority. New innovative methods of service delivery mechanisms shall be implemented. This has to be done by participation of various stakeholders. The councilors and the authority administration shall go hand-in-hand for the same. The major principles of Service Delivery include: accessibility, affordability, accountability, Quality, Sustainability, value for money, promoting competitiveness of local commerce and industry, promoting democracy.

Since resources are limited and needs are more, the service provider has to ensure optimum utilization of these. Care shall be taken while choosing the service delivery methods. Whatever methods are adopted, it has to be ensured that it works in the most effective manner and brings utmost payback for the community. Along with this, there shall be continuity, consistency and transparency in the services offered that will bring sustainability.

3. PRINCIPLES OF SERVICE DELIVERY

Urban services in India are offered by the local administration in charge of the area. The Municipal Law in its Twelfth schedule specifies the services to be provided by the municipal authorities concerned. Sesser et al (1978) says that services delivered shall meet the standard level as expected by the consumers. Most of the public service projects are initiated by the Government of the concerned area. It may be the State or Government departments or the Municipal Corporation. Those who provide service to the public are always answerable, on one side to the common public and on the other to the authorities above it, who provide the necessary funds, infrastructure and personnel to run the services. Thus, the providers of service are always at risk due to changes in policies of changing governing authorities. According to Berman (1998), there are two important factors that measure the success of public service delivery system. They are equity whereby all people have equal accessibility to the services offered, effectiveness which is the actual end results. For profit organizations along with above factors efficiency is also measured.

The demands of various stakeholders' affect the efficiency of service providers says Corrigan & Joyce (2000). They are in between the vicious circle of three E-

equity, effectiveness and efficiency. Balancing these three has often led to sacrifice of productivity. In spite of heavy expenditure, projects do not render the needed outputs. Carmel Joseph (2002) points out the need for partnerships in successful delivery of services. He suggests that service delivery designs or options shall be selected on the basis of suggestions given by the stakeholders involved like the consumers and the actual service providers. For doing this, the concerned national or state government shall build the capacity of the institution concerned.

On the part of the concerned public service providers, the service delivery becomes effective only if it follows principles of accessibility, accountability, affordability, quality, simplicity and value for money, in choosing various models or options. Service delivery shall take into account social, environmental and economic impact on the people living in the community. Not only providing services but also ensuring that they complement the policies of the local administration shall be ensured. Service delivery shall supplement poverty eradication and job creation. Karwan (2005) is of the opinion that any service shall be considered effective only if it creates value for its customers and the citizen. Using the service is considered as an important component in the management of public sector organizations.

4. EFFECTIVENESS IN SERVICE DELIVERY OF WATER SUPPLY SERVICES

Most of the public service projects undertaken by the government are on the mode of build, operate and transfer. This means that once a development project becomes operational, it will be handed over to the respective institution which will be responsible for the service delivery, operation and maintenance of the service concerned. Hence effectiveness or the end results of the civic services delivery represents the service delivery as a whole for the concerned civic service provided in the urban area, which represents the outcome of a number of urban development projects, irrespective of the funding agencies.

Water supply delivery is handled by the Kerala Water Authority (KWA) in the three corporations under study. KWA was established under an ordinance in the year 1984 by converting the Public Health Engineering Department. The assets, properties and functions relating to water supply and waste water disposal of the department was given to KWA. In 1986 the ordinance was replaced by the Kerala Water Supply and Sewerage Act (section 14). The assets, rights and liabilities of local bodies and Kerala State Rural Development Board in relation to the water supply and sewerage schemes were handed over to KWA under section 18 of the Act. KWA prepares, executes, operates and maintains water supply and waste water disposal schemes of the State as well as central sponsored and internationally aided projects. Along with this upon instructions from Government prepares plans for the above said schemes. It establishes standards for service delivery and also fixes, revises tariffs and taxes for service delivery of the above services. The Table 1.1 gives the details of Actual Service Levels as compared to the targeted one.

Particulars	T [*] puram		Kochi		Kozhikode		Standards Actually Required*
	T*	A*	T*	A*	T*	A*	
% of population with Accessibility to water	76.44	78	86.53	90	70	72.27	100%
Supply rate (average) in Lpcd (Litres Per Capita Per Day)	132	160.25	89	201.35	61	102.2	135lpcd
Quality of Water Supplied	90	92	90	99	91	100	100%
Supply Period, hrs per day	8-10	24	2-3	19	4-6	24	24Hrs
Unaccounted Water(% of production)	55	35	60	46.7	55	20	20%
Efficiency in water collection charge	-	100	-	80	-	90	90%
Extent of metering	-	100	-	96	-	90	100

Table 1.1: Actual Service Levels of Water supply

Source: Corporation website, Kerala Economic Review -State Planning Board, Kerala. * Fourteenth Finance Commission standard service levels fixed for urban areas.

T* Targeted A*-Achieved

The Table 1.1 shows that the coverage of water supply in urban areas has increased from 76.44 percent that was targeted to 78 percent at the end of period in Thiruvananthapuram district. In case of Kochi City the coverage in urban areas have increase from 86.53 percent to 90 percent and in Kozhikode it has increased to 72.27 percent. Though the standard level bench marks as per Fourteenth

Finance Commission says that the coverage shall be 100 percent coverage, there has been improvement in area covered. The supply rate of water as per standards laid is 135 liters per capita day. This target was crossed by the cities of Thiruvananthapuram and Kochi but in case of Kozhikode city, a lot more has to be done to achieve the standard fixed.

Quality of water supplied as rated after testing the water for many chemical test, shows that quality of water supplied is better in Kozhikode city where it was 100 percent quality assurance at the end of the study period as compared to 91 percent in the beginning and in Kochi City it is 99 percent in as compared to 90 percent at the beginning of the study period. In Thiruvananthapuram city the quality of water is not up to the standard, and as compared to 90 percent in beginning of study period it is 92 percent at the end of study period. The standards fixed are 100 percent. The water supply targeted was 24 hours continuous supply but the targets are not achieved in Kochi city. Both Thiruvananthapuram and Kozhikode cities have achieved to targets as per the secondary sources. The situation was not much good at the beginning of study period but in the end it has improved a lot. The replacement of old transmission pipes and automation in pumping of water has led to this achievement.

The loss of water due to leakage or open stand post was overcome to a great extent. The standard levels fixed allow 20 percent of loss of water. In Thiruvananthapuram city where the loss was 55 percent, it has been reduced to 35 percent. In Kochi city the loss of water has reduced from 60 percent to 46.7 percent and in Kozhikode city it has come down from 55 to 20 percent and is up to standard level fixed.

The efficiency in water collection charges as per standard set is 90 percent however. Thiruvananthapuram Corporation has achieved 100 percent as almost all connections are metered. In the case of Kochi Corporation only 96 percent connections are metered and efficiency in collecting charges is 80 percent. In the case of Kozhikode Corporation the metered connections are 90 percent and efficiency is also 90 percent. As per the table, the outputs achieved in terms of service delivery of water supply as compared to the beginning of study period and end of the study period have improved. The KWA has been able to bring improvements in the service delivery of water supply. The Sustainable Project under study has helped in improving the efficiency in pumping of water, installed automation of the water treatment plant, improved water transmission lines, replaced old lines and changed old pipes with that of greater durability, provided bulk meters in Kochi city. All this has helped the KWA in performing the service in a better manner in the city. However in comparison with the standards laid down, most of the achievements are not up to standard. Hence, it can be said that different sustainable projects have contributed in improving the service delivery of water supply service, but still there is scope for further improvement.

5. RESULTS AND DISCUSSIONS

The study objective was to test the effectiveness in service delivery of Sustainable Urban Development Projects in Kerala.. Secondary sources have proved that sustainable urban development projects in Kerala have improved the urban services delivery. The study uses the following hypothesis to study the effectiveness.

H0: There is no significant effectiveness in service delivery of sustainable urban development projects.

H1: There is significant effectiveness in service delivery of sustainable urban development projects.

At first, the variables contributing to effective service delivery were identified. With the help of primary sources, data was collected to measure the contribution of each variable in creating effectiveness in service delivery.

A. Variable Identified:

In order to study the effectiveness in service delivery variables selected were Accessibility (V_8), Availability (V_9), Quality of services (V_{10}), Value for money (V_{11}), Efficiency of service providers (V_{12}), and Sustainability of services (V_{13}). These variables were identified on the basis of literature review as well as contacts with officials involved in public service delivery system and contact with the public. Some other variables were rejected as per reliability test conducted in the pilot study.

1. Accessibility (V_8) of services: All people belonging to the concerned community shall have access to the basic level of services offered. Equitable distribution has to be ensured and for this new projects are initiated or old ones are upgraded. That is irrespective of the status of citizens all can get the services equally without any difficulty. The poor, and physically disabled can get the services without much difficulty.

2. Availability (V_9) of services: The consistency, the continuity, simplicity and regularity with which services are available was measured using this variable. The local administration responsible for service delivery shall also be accountable for the services offered. They have to assure regular as well as quality service provision.

3. Quality of services (V_{10}): There are norms or standards set for each type of services. While delivering the services, it shall be ensured that quality is not compromised. The services shall be safe, accessible and timely provided. Users will pay only for standard, quality services. From beneficiary point of view, quality of service represents safety; usage etc. People shall not be given below standard services. A ULB is accountable for providing adequate quality services to its citizens. Quality shall meet the expectations of the citizens.

4. Value for money (V_{11}): The service providers shall be accountable to the citizens in providing services for which they make payments. The citizen shall be ensured that he pays for the value of service he gets from the ULBs. Each service offered shall be affordable to all citizens of the particular area. Different pay schedule can be introduced.

5. Efficiency of service providers (V_{12}): This variable measures the method in which public services are delivered. Whether the complaints with regard to various services are addressed properly, rectification done accurately, the way in which the service delivery mechanism functions is also studied. The operation and maintenance of various services are also studied here. The local administration also ensures that people are not charged exorbitantly for services given and that the local trade and commerce is not hindered due to provision of services

B. Data Collection and Analysis

In order to measure the effectiveness in service delivery primary data was collected from the consumers or beneficiaries concerned with the help of a structured interview schedule. Data was collected for each category of services separately under the heads Availability (AVA), Accessibility (ACC), Quality of Service (QT), Value for Money paid (VM) and Efficiency of Service Providers (EF). The consumers/ beneficiaries were asked to rate their opinions on five point Likert Scale.

The study examined the effectiveness of service delivery of all services by examining five important dimensionalities (Figure 1.1). These are: (1) Accessibility of Service (ACC_SE), (2) Availability of Service (AVA_SE), (3) Quality of Service (QT_SE), (4) Value for Money (VM_SE), (5) and Efficiency of Service Providers (EF_SE). To examine the objective, the study conducted regression analyses where all these dimensionalities were considered as independent variables and effectiveness as dependent variable. The results of these five models are presented in the Table 5.6. As depicted in the Table, the examination results supported that all these five dimensionalities are statistically significant at 0.01 levels. Hence, the study supported the significance of all these five dimensionalities to improve efficiency of service delivery of all services.

Criteria		Water Supply (WS)
ACC	Est	.928
	S.E	.094
	C.R	9.862
	P	***
AVA	Est	1.140
	S.E	.104
	C.R	10.982
	P	***
QT	Est	1.043
	S.E	.101
	C.R	10.339
	P	***
VM	Est	.998
	S.E	.102
	C.R	9.777
	P	***
EF	Est	1.159
	S.E	.110
	C.R	10.505
	P	***

Table 1.2 : Unstandardized Regression Weights

Note: ***shows significance at 0.01 level, Source: Primary Data.

Availability of the water supply service was measured on a five point scale and the same was assessed using the questions relating to regularity, need for storage, adequate pressure in water supply, wastage of water and interruptions in water supply. Quality was assessed using the questions about odour, color, chlorination, taste, contamination felt, and water appearance. Accessibility was assessed by collecting information on nearness of water supply source, time saving, ease in collection, equity in water supply, safety and sufficiency in meeting needs with current availability. Value for money was measured by enquiring about the installation of meters, recording of readings, water tariffs charged, billing as per readings, willingness to pay more if required. Efficiency of the service provider was assessed using the knowledge about speed with which grievances are addressed, reduction in breaks and leaks in public places, efficiency in billing, proper maintenance and repair in times of need, dissemination of information about interruptions if any in water supply service. Sustainability was assessed by collecting information about awareness on water pollution, water resource preservation and rain water harvesting.

To assess the effectiveness of service delivery from beneficiary point of view, the following hypothesis was set for each service as given in Table 1.3

Variable studied	Hypothesis Set	Status
Accessibility (ACC_Service)	H1.1: Effectiveness in service delivery of SUDP* is reflected in Accessibility of service**.	Accepted
Availability (AVA_Service),	H1.2: Effectiveness in service delivery of SUDP* is reflected in Availability of service**.	Accepted
Quality (QT_Service),	H1.3: Effectiveness in service delivery of SUDP* is reflected in Quality of service**.	Accepted
value for money (VM_Service),	H1.4: Effective service delivery of SUDP* is reflected in Charges paid for service**.	Accepted
efficiency of service providers (EF_service),	H1.5: Effective service delivery of SUDP* is reflected in Efficiency of service providers of respective service**	Accepted

Table 1.3 Hypotheses to test effectiveness in service delivery of services
Source: Primary Data. SUDP*Sustainable Urban Development Projects.

Service includes Water Supply, Sanitation & Sewerage, Solid Waste Management, Storm Water Drainage and Urban Roads and Transportation Services. SUDPSustainable Urban Development Projects.

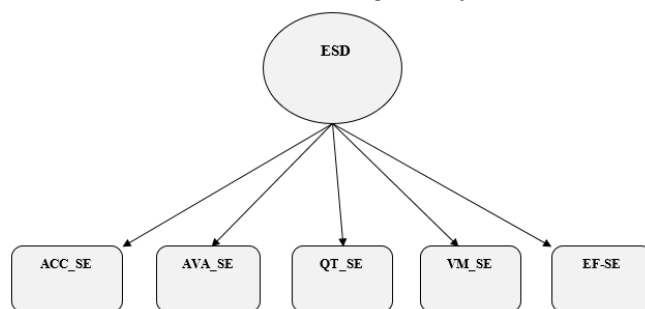


Figure 1.1: Path diagram showing effectiveness of Service Delivery

Note: ESD-Effectiveness in Service Delivery, ACC_SE Accessibility of Services, AVA_SE Availability of Service, QT_SE-Quality of Service, VM_SE-Value for Money, EF_SE Efficiency of service providers.

In addition, the standardized estimates, was used to understand the relative importance of each one of these dimensionalities to reflect the effectiveness of service delivery of services among these six dimensionalities. Table 1.4 gives the estimates for the services

Dimensionalities	Water supply
Accessibility (ACC_SE)	.707
Availability (AVA_SE)	.804
Quality (QT_SE)	.747
value for money (VM_SE)	.700
Efficiency of Service providers (EF_SE)	.761

Table 1.4 : Standardized Regression Weights (Estimates)

Source: Primary Data

Thus, the results prove that all above Hypotheses (H1.1 to H1.5), regarding the dimensionalities are statistically significant at 0.01 levels for Water Supply Services. From Table 1.4 it is found that effectiveness in service delivery is reflected in all dimensions of availability, accessibility, quality of services, value for money and efficiency of service providers. And out of the entire dimensions in case of water supply services, efficiency of service providers with .761 as standardized estimates is considered most reflected in providing effective service delivery. This is followed by availability of water supply with .804 as standardized estimates. Next dimensionality is the quality of water supply with .747 as standardized estimates. Value for money paid comes next with .928 as standardized estimates. The last dimension that influences the effectiveness in service delivery is the accessibility of service with .707 as standardized estimates. Thus the hypotheses **H1**: There is significant effectiveness in service delivery of sustainable urban development projects is accepted.

6. CONCLUSION

Water Supply and Sanitation, Sewerage are responsibilities of Kerala Water Authority, (KWA). They operate and maintain the service delivery. The Solid Waste Management is the responsibility of respective Urban Local Bodies. With regard to urban roads and drains they are shared responsibilities of Highway Authorities, Public Works Department (PWD) and Concerned Municipal authorities. All Urban Infrastructural development schemes initiated contribute to improve the services either by new additions or repairing and maintaining or improving the existing ones. The project studied in this research work has also contributed to improve the existing services and, in a few cases have made additions also. While studying effectiveness of service delivery, the service delivered by KWA, MCs, PWD in common are studied which also includes the work done by the project under study. The analysis done proves that Availability, Accessibility, Quality, Value paid and Efficiency of service providers of each service reflect effective service delivery. As for water supply service, the availability of water was most important factor.

REFERENCES

1. Asian Development Bank----, (1996), Annual Report, An Asia without Poverty----, (1999), Annual Report, Water in the 21st Century.
2. Berman, E. M. (1998). Productivity in Public and Nonprofit Organizations: Strategies and techniques; Sage: Thousand Oaks.
3. Corrigan, P., & Joyce, P. (2000). Reconnecting to the Public. *Urban Studies*, 37(10), pp. 1771–1779.
4. Department of Town and Country Planning(2012).State Urbanization Report-Kerala: A Study on the Scattered Human Settlement Pattern of Kerala and its Development issues, Government of Kerala.
5. Economic Review of Kerala (2017) State Planning Board, Government of Kerala, Thiruvananthapuram
6. Expert Group on Commercialization of Infrastructure (1996). The India Infrastructure Report: Policy Imperatives for Growth & Welfare, Ministry of Finance, Government of India, New Delhi
7. Kellogg, D., & Nie, W., (1995). A Framework for Strategic Service Management. *Journal of Operations Management*. 13. pp. 323-337.
8. Lovelock, C.H., (1983) Classifying Services to Gain Strategic Marketing Insights *Journal of Marketing*, 47(1): 9–20.
9. Mohr, L. A., & Bitner, M. J. (1995). The role of employee effort in satisfaction with service transactions. *Journal of Business Research*, 32(3), pp. 239-252.
10. Sesser, W.E., Olsen, R.P., & Wyckoff, D.D. (1978). Understanding Service Operations, in *Management of Service Operations*, Allyn and Bacon, Boston.
11. ShostackLynn, G. (1982). "How to Design a Service", *European Journal of Marketing*, 16(1), pp.49-63